

**ABSTRACT**

This invention related to a novel iron base alloy using residual austenite to improve wear resistance for valve seat insert material for internal combustion engines. The residual austenite is stable even after heat treatment and liquid nitrogen chilling. The alloy comprises of 2.0-4.0 wt % carbon, 1.0-3.0 wt % silicon, 0-4.0 wt % manganese, 3.0-9.0 wt % chromium, 5.0-15.0 wt % molybdenum, 3.0-15.0 wt % nickel, 0-6.0 wt % vanadium, 0-4.0 wt % niobium, 0-6.0 wt % cobalt, and the balance being iron with impurities.